Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

Wireless Internet Service Provider Association and Utilities Technology Council Request for Waiver of Citizens Broadband Radio Service Transition Deadline	))))	WT Docket No. 18-353

REPLY COMMENTS OF MOTOROLA SOLUTIONS, INC.

Motorola Solutions, Inc. ("Motorola Solutions" or "MSI") hereby provides these comments in response to the request for waiver submitted by the Wireless Internet Service Providers Association (WISPA) and the Utilities Technology Council (UTC) to extend the Citizens Broadband Radio Service (CBRS) transition deadline for Part 90 Subpart Z equipment, referred to here as Grandfathered Wireless Broadband Service (GWBS).[1] While the FCC considers whether to extend the transition deadline or not, MSI strongly recommends that it also consider updating the Part 90 Subpart Z registration database to reflect the use of actual operational frequencies by the GWBS.[2]

MSI agrees with several commenters that a very robust ecosystem is developing for the CBRS band, with multiple equipment vendors, systems integrators, and industry standards development organizations supporting the band.[3] Based on MSI's participation in this

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[1] *See* WISPA UTC, Petition for Waiver of Sections 90.1307 (c) and (d) and Sections 90.1338(a) and (b) of the Commission's Rules (Nov. 28, 2018) (Petition).

[2] *See ULS 3650 Locations: Daily Transfer of ULS 3650 Locations with Submitted Grandfathered Wireless Protection Zone Information*, FCC – OPEN DATA, https://opendata.fcc.gov/Wireless/ULS-3650-Locations/euz5-46g2/data (last visited, Dec. 7, 2018).

[3] *See e.g.*, Comments of CTIA at 7 ("*Ericsson, Nokia, Sercomm, and Ruckus Networks have all introduced Citizens Broadband Radio Service Devices ("CBSDs") certified by the Commission, and the CBRS Alliance expects "many more certifications" to be announced in the coming months")* (footnotes omitted), Comments of NCTA – The Internet & Television Association at 2, 3 ("*development of the CBRS band is progressing, and the Commission's recent adoption of revised rules for the band should further expedite that progress*"; Comments of T-

development, there are more than a dozen equipment vendors ready to supply equipment for the CBRS market, with over a half dozen Part 96 devices having already obtained FCC certification. MSI also expects many more types of CBRS equipment to be certified over the next 6 months. The WInnForum Spectrum Sharing Committee (with over 60 members), CBRS Alliance (with over 110 members), and 3GPP continue to diligently develop standards and specifications for the band.[4] The CBRS industry encompasses many different applications, ranging from providing fixed wireless access, to cellular service expansion/off-loading (for both the cellular and cable industries), as well as private broadband network deployments for industrial and enterprise users. With this high level of interest from multiple parties, the overall CBRS eco-system and equipment market will continue to rapidly develop. Motorola Solutions intends to be an active participant with the provision of services and equipment in the band.

When the CBRS rules were first adopted in 2015,[5] existing GWBS (Part 90 Subpart Z) users were given a grandfathered period of protection that provided five years or more of GWBS deployment protection.[6] Registered GWBS users are to be protected by the Spectrum Access System (SAS) from harmful aggregate interference levels, until their grandfathered period of protection ends, at which time they must convert to either General Authorized Access (GAA) or

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Mobile at 4 ("*more and more Part 96 equipment is becoming available . . . Ericsson, Nokia, Sercomm, Sierra Wireless and Arris' Ruckus Networks have received equipment authorization*"). All referenced comments were submitted to WT Docket No. 18-373 on December 12, 2019.

[4] *See CBRS Baseline Standards*, CBRS WINNFORUM STANDARDS, https://cbrs.wirelessinnovation.org/cbrs-baseline-specifications (last visited Dec. 7, 2018); *Key Published Specs: Setting the Standard for Seamless Interoperability*, CBRS ALLIANCE SPECIFICATIONS, https://www.cbrsalliance.org/specifications/ (last visited Dec. 7, 2018); The Third Generation Partnership Project (3GPP) has adopted Band 48 and 49 (3550-3700 MHz) in the US.

[5] *See Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959 (2015) ("CBRS Order").

[6] *Id.* at 4078, para. 408.

Priority Access License (PAL) operation under Part 96 rules.[7] There are several means available for grandfathered GWBS systems to transition operation to Part 96 rules.

The first, is to utilize a domain proxy function that controls legacy Part 90 Subpart Z radio operation (*e.g.*, through a network management system) and communicates with a SAS through a standardized interface.[8] The SAS – Citizens Broadband Radio Service Device (CBSD) interface standard specification that supports a domain proxy function and CBSDs was released early in 2018 by WInnForum, and this interface is already widely adopted by the SAS and CBSD equipment industry.[9] Given that the domain proxy is largely a function that can reside in software, MSI expects a rapid deployment of such capability. Several CBSD providers have already adopted the domain proxy approach to controlling multiple CBSDs (and have been certified under this approach). The domain proxy approach would allow existing GWBS radio equipment to rapidly meet Part 96 requirements for SAS control in the band, with minimal impact to existing radio equipment. MSI also notes that the transmit spectral mask has been relaxed for end user devices, which eases out-of-band emissions (OOBE) requirements for such equipment.

The second approach available to GWBS users for meeting the transition requirement is to integrate CBRS band equipment into their grandfathered networks. This approach has the added advantage that such equipment will be able to tune the entire 150 MHz band, providing

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7 *Id.* at 4076, para. 400.

8 *See id.* at 4127, para. 20. This proxy controller device is referred to as a "domain proxy" function in WInnForum standards.

9 *See Document Details – WINNF-TS-0016-V1.2.2 SAS to CBSD Technical Specification. pfd*, WIRELESS INNOVATION FORUM, https://workspace.winnforum.org/higherlogic/ws/public/document?document_id=7279 (last visited Dec. 7, 2018). This specification has been incorporated into the FCC CBSD certification procedures, and is widely supported among SAS's and CBSDs.

superior spectral availability. As described above, there will be wide availability of diverse CBRS band equipment readily available for purchase before the earliest mid-2020 transition date. As an additional advantage, higher power levels are allowed under CBRS band rules[10] than under Part 90 Subpart Z rules (*e.g.*, 50 W EIRP / 10 MHz vs. 1 W/1 MHz EIRP for fixed base stations).[11] Equipment costs should be reasonable, due to the large number of vendors providing equipment for the band. In short, the transition plan established by the FCC provides all of the necessary components for a successful migration.

GAA spectrum use will be readily available for Part 90 Subpart Z users even at the earliest transition date (in 2020), and the overall ecosystem will be well established by then. Given past statements by the FCC, MSI expects that PAL auctions could occur in the second half of 2019.[12] This would allow PAL spectrum deployments shortly thereafter, since GAA and PAL equipment is similar in other respects.[13] Thus, MSI believes that the band is ripe to be utilized in a time frame fully consistent with the original transition deadline.

One issue with the transition was highlighted in the comments submitted by Federated Wireless which discussed the significant ramifications of certain Part 90 Subpart Z device protections.[14] In particular, Federated Wireless noted that the current approach for Grandfathered Wireless Protection Zones requires the Spectrum Access System (SAS) to protect GWBS as if the entire 3650-3700 MHz band was in use by each grandfathered incumbent,

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10 47 CFR § 96.41(b).

11 47 CFR § 90.1321.

12 *See* John Eggerton, *FCC Proposes County-Wide CBRS Licenses*, BENTON (Oct. 2, 2018), https://www.benton.org/headlines/fcc-proposes-county-wide-cbrs-licenses.

13 For example, all CBRS band equipment must be able to tune the entire 150 MHz CBRS band. See 47 CFR § 96.39(b).

14 Comments of Federated Wireless, Inc., WT Docket No. 18-353, filed December 12, 2018, at 3, 4.

regardless of whether that is actually the case.[15] Federated Wireless concluded that the practical effect of the requested blanket extension would be to encumber huge swaths of CBRS spectrum until 2023 even if significant portions of that spectrum is not actually being used.[16]

MSI agrees that the current FCC database of registered Part 90 Subpart Z users may significantly over-estimate the actual operational spectrum usage by GWBS users. MSI's review of the registration data indicates that over 90 percent of the registered GWBS deployments reserved the entire 50 MHz (unrestricted) or 25 MHz (restricted) portion of the band for protection, even though their emissions designators indicate that their actual usage of spectrum in the band is typically much less *(e.g.*, typically 5-18 MHz).[17] On its face, this analysis raises concerns that nearly 25 MHz of the spectrum in the 3650-3700 MHz portion of the CBRS band would be unnecessarily prohibited from Part 96 usage. Such unnecessary protection criteria could help stifle development of the CBRS during its critical initial roll-out.

MSI believes that GWBS users are fully entitled to protection of actual operating frequencies, but should not be granted protection for unused frequencies in the band.[18] This represents a waste of valuable spectrum resources. MSI strongly encourages the Commission to update and improve the accuracy of Part 90 Subpart Z registration data to most efficiently utilize

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15 *Id.*

16 *Id.* at 4.

17 It appears that most registrants did not specify a channel center frequency, but instead registered the 3650-3700 MHz lower and upper limits of the unrestricted band (or the 3650-3675 MHz lower and upper limits of the restricted band). Most Emissions Designators indicate a much smaller occupied bandwidth for the signals. It is also possible that some users may be using multiple transceivers at a given location, which should be individually registered. MSI supports frequent updates of registration data (e.g., weekly or monthly) if Part 90 Subpart Z users feel the need to update actual channel usage as conditions change, rather than claiming whole-band protection.

18 *See* CBRS Order at 4076, para. 402 ("During the transition period, grandfathered licensees will receive interference protection from other 3.5 GHz Band users operating in the 3650-3700 MHz band segment (i.e., GAA users) for network operations and frequencies that are **in use** at registered sites as of April 17, 2016") (emphasis added). Protection to GWBS adjacent frequencies was not granted.

the spectrum. MSI recommends that immediate (and possibly periodic) updates to ensure accurate actual usage data should be required regardless of whether a transition deadline extension is granted or not.

MSI looks forward to the many opportunities that the CBRS band provides for existing and new broadband data applications, and strongly encourages the Commission and Part 90 Subpart Z users to update critically important registration data for the band to reflect the use of actual operational frequencies.

Respectfully Submitted,

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